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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,931	09/22/2003	Gee-Sung Chae	041993-5233	5116
9629	7590	01/23/2006	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			KIM, RICHARD H	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

**Office Action Summary**

Application No.

10/664,931

Applicant(s)

CHAE ET AL.

Examiner

Richard H. Kim

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2005.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4,6-14 and 71 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1,3,6-14 and 71 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Wakai et al. (US 5,327,001).

Referring to claim 1, Wakai et al. discloses a device comprising a plurality of gate lines and data lines (col. 10, lines 45-47) crossing each other to define a plurality of pixel regions (212); a plurality of thin film transistors including a gate electrode (202) on a first substrate (201), a gate insulating layer (203) over the first substrate, a semiconductor layer (204), source/drain electrodes (211, 210), each disposed on one of the pixel regions; and a plurality of pixel electrodes, each disposed in one of the pixel regions, wherein the thin film transistors; and at least one Ti layer (207) on at least one layer of the gate electrode, the semiconductor layer, and the source/drain electrodes of the thin film transistor.

Referring to claim 6, Wakai et al. discloses that the Ti layer is formed on the semiconductor layer to function as an ohmic contact layer (207).

Referring to claims 12 and 13, Wakai et al. discloses a plurality of gate lines and data lines crossing each other to define a plurality of pixel regions (212); a thin film transistor in each pixel region; a pixel electrode in each pixel region (212), and a metal masking layer in the thin film transistor comprising Ti (207)

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 4, 8-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakai in view of Kaneko et al. (US 6,433,842 B1).

Wakai et al. discloses the method previously recited, but fails to disclose that the device comprising a titanium oxide layer formed on at least the passivation layer, the pixel electrodes, in the thin film transistors or as a masking layer having hydrophilic properties.

Kaneko et al. discloses a device comprising a titanium oxide layer having hydrophilic properties (col. 8, lines 24-31).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a titanium oxide layer formed on at least the passivation layer, the pixel electrodes, in the thin film transistors or as a masking layer having hydrophilic properties since one would be motivated to utilize titanium oxide wherever etching is required in order to avoid local spotting of water and prevent an occurrence of disconnection due to failure to adhesion to resist (col. 8, lines 28-30)

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wakai et al.

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Wakai et al. discloses the device previously recited, but fails to disclose a black matrix on a second substrate, a color filter layer on the second substrate.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a black matrix on a second substrate, a color filter layer on the second substrate since color filters and black matrices are well known to produce a color display and to reduce light leakage, respectively.

6. Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wakai et al. in view of Ha et al. (US 6,620,655 B2) and Fujikawa et al. (US 6,297,519).

Wakai et al. discloses the device previously recited. Wakai et al. further discloses that the masking layer includes Ti (207) disposed on the source/drain electrodes, but fails to disclose that the metal masking layer includes Ti disposed on upper surfaces of a semiconductor layer and a gate electrode.

Ha et al. discloses a device comprising a metal masking layer including TI disposed on a gate electrode a metal masking layer including TI disposed on an upper surface of a gate electrode (Fig. 8A, ref. 129b).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a metal masking layer including TI disposed on a gate electrode since one would be motivated to protect the gate electrode (col. 10, line 8).

Fujikawa et al. discloses a device wherein a metal masking layer including TI (15) is disposed on an upper surface of a semiconductor layer.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ metal masking layer including disposed on an upper surface of a semiconductor layer since one would be motivated to prevent element performance from being degraded by AL diffusion (col. 1, lines 58-60).

### ***Response to Arguments***

7. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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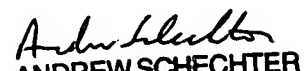
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H. Kim whose telephone number is (571)272-2294. The examiner can normally be reached on 9:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard H Kim  
Examiner  
Art Unit 2871

RHK

  
ANDREW SCHECHTER  
PRIMARY EXAMINER